Index

to

1936 Transactions

A

P	age
Abrasive Blasting Machines, Types. Acetylene, Costs of Cutting with Air Furnace Refractories. Air Furnace Slags, Composition of Malleable Air Hardening Cast Iron, Composition.	$\frac{328}{265}$
Alloy Cast Iron: Air Hardening Applications Automotive Castings Composition of Heat Treated. Copper and Copper Manganese Fatigue Properties of. Hardening and Tempering. Heat Treatment of. Machinery Castings Alloy Cast Steels, Contraction of.	163 387 51 528 373 172
	39 390
Aluminum: Effect on Brass Fluidity of Cast Iron Affected by Magnesium Alloys Affected by Aluminum Bronze, Founding	127 47 479 606 173 120 428 519
Applications: Alloy Cast Iron. 1 Aluminum Bronze Castings. 366, 4 Copper-Silicon Alloy Castings. 2 Furnace Refractories 2 Heat Treated Cast Iron. 1 Magnesium Alloy Castings. 1 Manganese Bronze Castings. 4	486 203 272 161 46
Apprentice Training: Cleveland Plan for. 3 City-Wide Plan for. 3 5 Detroit Industries Plan 2 2 Program, Basic Points in. 2 3 Rates of Pay in. 293, 3 Smith-Hughes Act Aids 3 Apprenticeship, Foundry Arsenle, Effect on Manganese Bronze. 4 Austentitic Cast Irons, Heat Treatment 1	304 298 292 314 317 289 472
Automobile Cylinder Sleeves, Cast Iron	

Index

to

1936 Transactions

A

P	age
Abrasive Blasting Machines, Types. Acetylene, Costs of Cutting with Air Furnace Refractories. Air Furnace Slags, Composition of Malleable Air Hardening Cast Iron, Composition.	$\frac{328}{265}$
Alloy Cast Iron: Air Hardening Applications Automotive Castings Composition of Heat Treated. Copper and Copper Manganese Fatigue Properties of. Hardening and Tempering. Heat Treatment of. Machinery Castings Alloy Cast Steels, Contraction of.	163 387 51 528 373 172
	39 390
Aluminum: Effect on Brass Fluidity of Cast Iron Affected by Magnesium Alloys Affected by Aluminum Bronze, Founding	127 47 479 606 173 120 428 519
Applications: Alloy Cast Iron. 1 Aluminum Bronze Castings. 366, 4 Copper-Silicon Alloy Castings. 2 Furnace Refractories 2 Heat Treated Cast Iron. 1 Magnesium Alloy Castings. 1 Manganese Bronze Castings. 4	486 203 272 161 46
Apprentice Training: Cleveland Plan for. 3 City-Wide Plan for. 3 5 Detroit Industries Plan 2 2 Program, Basic Points in. 2 3 Rates of Pay in. 293, 3 Smith-Hughes Act Aids 3 Apprenticeship, Foundry Arsenle, Effect on Manganese Bronze. 4 Austentitic Cast Irons, Heat Treatment 1	304 298 292 314 317 289 472
Automobile Cylinder Sleeves, Cast Iron	

P	age
Automotive Cast Irons, Composition and Heat Treatment of Alloy Aviation Motor Cylinders, Composition of Cast Iron	373 169
. В	
Ball-Bearing Calibrating Plates, Alloy Cast Iron	$\begin{array}{c} 166 \\ 255 \end{array}$
Bibliography on: Fatigue of Cast Iron Hardening and Tempering Cast Iron High Temperature Testing of Foundry Sands Manganese Bronze Bismuth, Effect on Manganese Bronze. Blast Cleaning of Steel Castings. Blast Furnace Refractories. Blast Furnace Slag Composition. Blast Fressure on Manganese Losses in Cupola, Effect of Bonding Clays, Effect of Constitution on Properties of. Bonding Clays, Behavior at High Temperatures Brass, Effect of Various Elements on. Bronze, Aluminum, Production of. 359, Bronze, Manganese, Production of.	397 413 474 472 502 262 261 600 211 406 469 479
C	
Cadmium, Effect on Manganese Bronze	472
Carbon: Effect of Combined, on Tempering and Hardening Cast Iron Fluidity of Cast Iron Affected by Pickup in Cupola Tested with Various Types of Coke Silicon Contents, Effect in Heat Treated Cast Iron Carbon-Dioxide, Fills Aluminum Bronze Casting Molds with	116 178 386
Cast Iron:	
Air Hardening Alloy. Applications of Heat Treated Alloy. Behavior of Manganese in Cupola Melting. Copper and Copper Manganese, Properties and Composition. Effect of Alloys on Quenching Speed of. Effect of Pouring Temperature on Strength of. Endurance Limit of Alloy. Facing Sands for. Fatigue Properties of. Fluidity Testing of. Heat Treatment of Martensitic and Austenitic. Machinery Castings, Alloy. Modulus of Elasticity of Heat Treated, Effect of Phosphorus on. Molybdenum, Effect on Nitrogen-Hardening. Nickel Chromium, Applications. Nitrogen-Hardening Sand Control Structure, Effect of Pouring Temperature on.	161 592 51 394 119 536 620 528 122 161 382 392 161 392 615 117
Cast Steel	171 384 480 206 259

	Chills for Aluminum Bronze Castings	463 497 7, 19 149 406 211
-	Magnesium Alloy Castings Steel Castings Cleveland Trade School Trains Apprentices. Coatings for Chills for Manganese Bronze Castings Coke, Carbon Pickup in Cupola with Various Types of Compressive Strength of Copper and Copper-Manganese Cast Iron71	308 463 178
	Composition: Alr Hardening Alloy Cast Iron. Alloy Cast Iron Machinery Castings. Aluminum Bronze	161 480 387 261 384 217 58 79 387 46 265 457 492 251 407 403 1 405 265
	Copper: And Copper Manganese Gray Cast Iron Cast Steel, Contraction of	7, 19 47 127 62 193 37
	Cost: Flame Cutting, with Propane Malleable Furnace Charges, Relative. Refractory Hot Metal Trough Tile. Coupons, Report on Steel Casting Test Cracks, Effect of Pouring Temperature on Hot. Critical Points of Alloy Cast Steels under Free and Restricted Contraction.	421 253 133 119 20
	Critical Points of Copper Cast Iron	77 460

	Page
Cupola:	
Determining Height of Molten Metal in	98
Manganese Bronze Melted in	
Oxidation of Manganese in	
Refractories, Behavior under Severe Operating Conditions	
Pickup in Tuyere Height Affects Carbon	
Cupro-Manganese, Properties of	
Cutting Gates and Risers with Propane	324
Defects.	
Pouring Temperature of Manganese Bronze May Cause	466
Magnesium Alloy Castings	
Non-Ferrous Castings, Report on Methods of Analysis of	606
Definition of Deformation in Molding Sand	
Deformation of Malleable Foundry Sands Deformation of Molding Sand	
Deoxidation of Malleable Iron, Effect of, on Fracture	
Design, Aluminum Bronze Castings	362
Detroit Trains Apprentices	
Device for Determining Height of Molten Metal in Cupola Drawing and Quenching Cast Iron	
The state of the s	0.0
E	
Elasticity, Modulus of, Heat Treated Alloy Cast Irons	382
Electric Furnaces:	
Efficiency of Various Types of	420
Manganese Bronze Melted in	461
Refractories for	
Scaling of Steel Castings by Annealing in Embrittlement of Manganese Bronze	
Endurance Limit of Cast Iron	536
Expansion of Foundry Sands, Testing	405
Forter Conde	
Facing Sands: Magnesium Alloy Castings	35
Cast Iron Castings.	620
Malleable Iron	
Fatigue Properties of Cast Iron	
Fineness Affects Deformation of Molding Sand	
Fines in Malleable Foundry Sands.	
Finish of Malleable Castings According to Sands Used	
Finishing Magnesium Alloys	. 42
Fire Hazards with Magnesium Alloys	
	021
Fluidity: Measuring and Controlling	100
Measurement of	122
Versus Temperature	. 114
Foundry Factors Affecting Fluidity	. 114
Foundry Refractories	
Forehearth Refractories	204

Page
French Applications of Heat Treated Cast Irons 161
Furnace:
Atmosphere, Effect on Fluidity of Cast Iron. 117 Atmosphere for Melting Copper-Silicon Alloys. 195 Efficiencies, Comparison of Malleable. 418 Refractories, Foundry 254 Report Operation of Sesci. 610 Slags, Composition of Malleable Air Furnace. 265
Furnaces:
Malleable Iron Melting. 417 Manganese Bronze Melting. 460 Refractories for Foundry. 254 Fusion Test for Foundry Sands. 404
G
Gates, Cost of Removal with Propane Cutting Gas 328
Gating:
Aluminum Bronze Castings
Н
Hammers for Cleaning Steel Castings, Selection of Chipping. 498 Hardening Cast Iron. 373 Hardness of Copper Cast Iron. 64, 83 Hardness of Malleable Iron, Effect of Melting Unit on 438 Heat, Effect of, on Clays. 221
Heat Treated Cast Iron: Modulus of Elasticity of 382 Composition and Properties 373 Effect of Various Elements on 387 Heat Treating Furnace Refractories 275
Heat Treatment:
Alloy Cast Iron Machinery Castings. 161 Copper-Silicon Alloy Castings. 201 Magnesium Alloys 44 Malleable Iron on Properties, Effect of. 507 Manganese Bronze 473 Steel Castings 230 High Temperature Properties, Copper-Silicon Alloys 205
Hot Cracks, Effect of Pouring Temperature on Malleable Iron. 119 Hot Metal Troughs, Tile for. 248 Hygiene, Report of Committee on Industrial 552 Hygiene in the Foundry, Safety and .554, 565, 576

	Dage
Indentures, Apprenticeship Industrial Hygiene, Report Instruction of Apprentices. Insulated Ladles, Construct Internal Stress, Effect of I Iron, Effect on Brass	Page 471 171
	L
Ladles, Use of Insulated Lead, Effect on Brass Legislative Aspects of Safe Loom Rollers, Heat Treate	tic Open-Hearth Steel. 260 106 470 ty and Hygiene in the Foundry 565 d Cast Iron. 171 ganese. 595
	М
Magnesium Alloys, Recomm	
Malleable Iron:	
Facing Sands for Fineness of Sands Use Melting Units for Metallographic Change Molding Sands, Proper Specifications, Report Fluidity Testing of	rnace Slags for
Manganese:	
Bronze, Production of Cast Steels, Contractio Copper Cast Iron Prop Brass Affected by Magnesium Alloys Affe Oxidation in the Cupc Martensitic Cast Irons, He	457 n of Medium
Melting:	
Copper-Silicon Alloys Furnaces for Malleable Magnesium Alloys Manganese Bronze Metal in Cupola, Determin Metallurgical Factors Influ Microstructure of Mangan Mixtures, Copper-Silicon A	
Modulus of Resilience in Moisture, Effect on Deform	eat Treated Alloy Cast Irons 382 folding Sand, Calculation of 140 action of Molding Sand 144 Foundry Sands 345

Mold Hardness Affects Deformation of Molding Sand	
Molding:	
Aluminum Bronze Castings	196 34 and 392 7, 19 248
N	
Nickel:	
Cast Iron Aviation Motor Cylinders	7, 19 392 47 394 161 392 608
Notches in Cast Iron, Effect on Endurance Properties	
0	
Open-Hearth Furnace Refractories. Open-Hearth Melting of Manganese Bronze. Optical Pyrometers, Standardizing. Oxidation of Manganese in the Cupola. Oxyacetylene, Cost of Flame Cutting with. Oxygen Content of Malleable Iron.	460 105 592 328
P	
Painting Magnesium Alloy Castings	314 410 347 381
Phosphorus:	
Fluidity of Cast Iron Affected by	390 472 382 415 168
Pouring:	
Aluminum Bronze Castings	

	rage
Fluidity Tests	125
Ladles, Description of Insulated	
Manganese Bronze Castings	465
Test for Refractoriness of Foundry Sands	404
Pouring Temperature:	
	100
Effect on Annealibility of Malleable Iron	
Effect on Fluidity of Cast Iron.	
Effect on Strength of Cast Iron	
Copper-Silicon Alloys	
Manganese Bronze	466
Measuring and Controlling	103
Precipitation-Hardening of Copper Cast Iron	74
Preparation of Molding Sand for Cast Iron Castings	618
Progress of Safety and Hygiene in the Foundry	
	044
Properties:	
Aluminum Bronze	
Centrifugally Cast Iron	
Copper Cast Iron	
Copper-Silicon Alloys	
Magnesium Alloys	
Malleable Iron, Effect of Melting Equipment on	
Manganese Bronze	468
Molding Sands for Cast Iron	
Simple Brasses	468
Pump Bodies Alloy Cast Iron, Composition	
Pyrometers, Standardizing Optical	100
Q	
Quenching Speed of Cast Iron, Effect of Alloys on	394
Quenching Temperatures for Hardening Cast Iron	388

R	
Radiography, Report of Committee on	Kou
Rates of Pay for Apprentices	214
Recommended Practices for Sand Cast Magnesium Alloys	33
Red-Shortness of Copper Cast Iron	73
Red-Shortness of Copper-Manganese Cast Iron	90
Refractories:	
Acid Open-Hearth	980
Heat Treating Furnace	275
Uses for Various Types of Foundry	
Refractoriness of Foundry Sands, Testing	
Refractoriness of Malleable Molding Sands	339
Refractory Life in Cupola, Points to Lengthen	
Related Instruction for Apprentices	294
Report of:	
Committee on Industrial Hygiene.	552
Committee on Methods for the Analysis of Defects in Non-Ferrous	
Castings	606

Committee on Study of Methods for Producing Liquid Steel for	Page
Castings Malleable Division Committee on Specifications Representatives on Joint Committee on Effects of Phosphorus and	608
Sulphur in Steel. Steel Castings Specifications Activities of A.S.T.M. Steel Division Committee on Radiography. Steel Division Committee on Test Coupons. Technical Director, Foundry Sand Research Committee.	589 133 158
Resilience of Molding Sand	139
Aluminum Bronze Castings. Magnesium Alloy Castings. Manganese Bronze Castings. Risers, Cost of Removal with Propane Cutting Gas. Roof Refractories for Basic Open-Hearths. Rotary Furnace Refractories. Ruble, Value of Russian.	35 465 328 257 266
S	
Safety and Hygiene in the Foundry554, 565,	576
Sand:	
Aluminum Bronze Molding Cast Iron Facing. Cast Iron Castings Weighing 1 to 100 Lb., Properties of Cast Iron Castings Between 100 and 300 Lb., Properties of Copper-Silicon Alloy Castings, Molding Deformation and Resilience of Molding Grain Distribution of Foundry Copper-Silicon Alloys, Core Expansion of Foundry, at High Temperatures. Fineness of Malleable Molding Magnesium Alloy Castings, Molding	620 618 618 196 139 545 197 405
Manganese Bronze, Molding, Properties of. Malleable Iron Foundry Molding. Malleable Castings Finish Affected by Fines in Molding. Properties of Slinger. Research Committee, Report of Director of. Testing at High Temperatures. Testing Records for.	337 344 617 158 401
Scaling:	
Copper Cast Iron Resists. Loss, Effect of Annealing Temperatures on. Losses in Heat Treatment of Steel Castings. Scrap Recovery of Magnesium Alloys. Scrap Recovery of Manganese Bronze. Sea Coal Affects Deformation of Molding Sand. Sesci Furnace, Report on Operation of.	39 462 153
Shrinkage of:	
Copper Cast Iron	71 89 198
Silicon:	
Effect on Fluidity of Cast Iron Effect on Magnesium Alloys	47

INDEX	637
	age 404
Skild Used to Remove Cupola Dump	237 301 36 261 265 317
Specifications:	
Copper-Silicon Alloy Magnesium Alloy Castings. Report on Malleable Iron. Report on A.S.T.M. Activities for Steel Castings. Standardizing Optical Pyrometers. Steel Content of Charge, Effect on Fluidity of Cast Iron.	49 608 626 105
Steel Castings:	
Cleaning Contraction of Alloy. Critical Points Affected by Freedom of Contraction in. Report on Methods of Producing Metal for. Report of Committee on Phosphorus and Sulphur in. Report of Committee on Radiography of. Report of Committee on Test Coupons for. Report on Specifications Activities of A.S.T.M. for. Scaling of Strainer Gates for Copper-Silicon Alloy Castings. Strength of Malleable Foundry Sands. Strength of Molding Sand, Deformation Affected by. Stress-Deflection Curves for Heat Treated Cast Iron. Structure, Effect of Pouring Temperature on Cast Iron. Sulphur in Steel, Report of Committee on. Sulphur, Removal from Manganese Bronze. Superheating Manganese Bronze. Support Castings, Composition of Cast Iron.	415 589 133 626 229 197 349 150 381 117 463 463
Tapping Temperature on Manganese Losses in Cupola, Effect of	600
Teapot Ladles, Construction of Insulated. Temperature, Effect on Manganese Bronze Properties. Temperature Versus Fluidity Tempering Cast Iron. Test Coupons for Steel Castings, Report on.	111 472 114 373
Testing: Carbon Pickup in Cupola Contraction of Foundry Sands. Chipping Hammers for Steel Castings Deformation of Molding Saud Expansion of Molding Sands Fatigue Properties of Cast Iron Foundry Sands at High Temperatures. Grain Distribution of Foundry Sands Grinding Wheels for Steel Castings. Records for Sand Refractoriness of Foundry Sands at High Temperatures. Thermal Expansion of Copper Cast Iron Tile for Hot Metal Troughs, Refractory Tin, Effect on Brass	405 498 141 405 528 401 545 501 617 403 77 248

Page
Tools for Cleaning Magnesium Alloy Castings 42 Training Foundry Apprentices 289, 298, 308 Troughs, Tile for Hot Metal 248 Tuyere Height on Carbon Pickup in Cupola, Effect of 178
V
Vanadium Cast Steel, Contraction of
W
Wall Refractories for Basic Open-Hearths 258 Water-Blasting Steel Castings 503 Weaving Loom Rollers, Composition of Alloy Cast Iron 171 Welding Copper-Silicon Alloy Castings 200 Welding Magnesium Alloy Castings 42 Wheel Speeds for Cleaning Steel Castings, Grinding 501
Z
Zinc, Effect on Magnesium Alloys
Authors' Index
to 1936 Transactions
PAGE
Allan, J. R.—Report of A.F.A. Committee on Industrial Hyglene 552 Andrews, F. H. and Jamison, E. A.—Industrial Propane for Flame Cutting and General Foundry Use
BALLAY, MARCEL and CHAVY, R.—Some Applications of Heat Treated
Cast Irons in France
BEDWORTH, H. A. and WEAVER, V. P.—Sand Castings of Copper-Silicon
Alloys 193
Boulton, H. W.—Apprentice Plans for Detroit Industries
Manganese Gray Cast Iron 51
Bowers, J. A. and Green, Chas.—Overcoming Spout Trouble by Use
of a Monolithic Trough Tile
Bradley, W. F., Grim, R. E. and Bray, R. H.—The Constitution of
Bond Clays and Its Influence on Bonding Properties 211
BRAY, R. H., GRIM, R. E. and BRADLEY, W. F.—The Constitution of
Bond Clays and Its Influence on Bonding Properties
Contraction in Steel Castings—IV—The Free and Hindered Con-
traction of Alloy Cast Steels
BRITTON, Dr. J. A.—Progress in Safety and Hygiene in the Foundry—
III—Open Forum 576
Bull, R. AReport of A.F.A. Representative on Joint Committee on
Effects of Phosphorus and Sulphur in Steel 415
Bull, R. A.—Report on Steel Casting Specifications Activities of
A.S.T.M 626

	2000
CHAYY, R. and BALLAY, MSome Applications on Heat Treated Cast	Page
Irons in France	161 359
Daasch, H. L.—Notes on Fatigue Properties of Cast Iron	
DAVIS, M. T.—Behavior of Manganese in the Cupola DEANE, H. A.—Practical Sand Control in Gray Iron Foundries	
DIETERT, H. W. and DIETERT, R. A.—Deformation and Resilience of	010
Molding Sand	139
DIETERT, H. W. and VALTIER, F.—Molding Sand in the Malleable Iron Foundry	337
DIETERT, R. A. and DIETERT, H. W.—Deformation and Resilience of	
Molding Sand	
DOUGHER, P. A.—Cleaning Steel Castings	400
Eastwood, L. W., Bousu, A. E. and Eddy, C. T.—Copper and Copper Manganese Gray Cast Iron	51
Eddy, C. T., Eastwood, L. W. and Bousu, A. E.—Copper and Copper	01
Manganese Gray Cast Iron	51
GANZAUGE, M. T.—Production of Aluminum Bronze Castings to Withst	
High Pressure	479
Contraction in Steel Castings—IV—The Free and Hindered Con-	
traction of Alloy Cast Steels	1
GIRSCHOVITCH, N. G. and LANDA, A. F.—The Selection of Melting Furnaces for Malleable Iron	417
GOLDIE, J. G.—Training Foundry Apprentices in Cleveland	308
Green, Chas. and Bowers, J. A.—Overcoming Spout Trouble by Use of a Monolithic Trough Tile	248
GRIM, R. E., BRAY, R. H. and BRADLEY, W. F.—The Constitution of	210
Bond Clays and Its Influence on Bonding Properties	211
HARMON, CARL-Determining the Height of Molten Metal in the	
Cupola Hensel, F. R.—Manganese Bronze—A Correlated Abstract	98
	289
HURST, J. E.—The Heat Treatment of Cast Iron by Hardening and	0.70
Tempering	313
Jamison, E. A. and Andrews, F. H.—Industrial Propane for Flame Cutting and General Foundry Use	324
JOHNSON, H. V. and MACKENZIE, J. T.—Effect of Tuyere Height on	
Carbon Pick-up in the Cupola	178
I—Medical Aspects	554
JOSEPH, CARL F.—Measuring and Controlling Pouring Temperatures	109
and Fluidity JUNGE, C. H. and SCHWARTZ, H. A.—Metallographic Changes During	103
Cooling Between the First and Second Stages of Annealing,	507

Page	_
Page Kyle, P. E.—Foundry Sand Testing Problems at High Temperatures. 401	
LANDA, A. F. and Girschovitch, N. G.—The Selection of Melting Furnaces for Malleable Iron	
MacKenzie, J. T. and Johnson, H. V.—Effect of Tuyere Height on Carbon Pick-up in the Cupola	3
REICHERT, W. G.—A.F.A. Grain Distribution Numbers for Foundry Sand	
Schwartz, H. A.—Report of Malleable Division Committee on Specifications	3
Schwartz, H. A. and Junge, C. H.—Metallographic Changes During Cooling Between the First and Second Stages of Annealing 507 Stay, T. D.—Recommended Practices for Stad Cast Magnesium Alloys 33 St. John, H. M.—Report of Committee on Methods for the Analysis	3
of Defects in Non-Ferrous Castings	
VALTIER, F. and DIETERT, H. W.—Molding Sand in the Malleable Iron Foundry	7
Weaver, V. P. and Bedworth, H. A.—Sand Castings of Copper-Silicon Alloys	3
Wrabetz, V.—Progress of Safety and Hygiene in the Foundry—II— Legislative Aspects	5

Material Printed in Bi-Monthly "Transactions"

All 1936 Transactions material, as cross-indexed on pages 628 to 638, has been printed in Bi-Monthly "Transactions of A.F.A." To find quickly the bi-monthly issue in which any of the indexed subjects appear, refer to the following:

Bi-Monthly Issue	-	Transactions Pages
July-August, 1936		 1-160
September-October, 1936		 161-288
November-December, 1936		 289-416
January-February, 1937		 417-544
March-April, 1937		 545-640

